Local Hazard Mitigation Plan ANNEX
City of Santa Clara
2005

Introduction

The City of Santa Clara California is located in the heart of Silicon Valley at the south end of San Francisco Bay. At 19.3 square miles in size, three Interstate Freeways border Santa Clara, three expressways transverse the city, and two major railroad lines bisect the city. Santa Clara is host to the major electronics companies and the home of many silicon chip manufacturers, including the corporate headquarters Intel and Sun Microsystems. The City of Santa Clara is uniquely located at the South end of San Francisco Bay between the San Andreas and Hayward earthquake faults. A light rail system crosses the Northern portion of the city and Santa Clara is in the take off and landing pattern for San Jose International Airport. The City has a population of 104,000 people, based on the 2000 census[1]. Last year, the City's budget was $447,000,000. The City employs 1800 people. The City provides police and fire services, has a municipal electric utility, provides water services and sewage collection for the City.

The Planning Process

This process of preparing this plan was familiar to the City of Santa Clara. The City has a General Plan, updated in 2004, that discusses All Risk Hazards including fire, earthquake, flooding, hazardous materials and weapons of mass destruction. The City's effort has focused on disaster vulnerabilities in order to work on ways to address these risks through mitigation.

Many of the activities conducted by the City were fed into the planning process for the multi-jurisdictional plan. The City participated in various ABAG workshops and meetings, including the general "kick-off" meeting. In addition, the City has provided oral comments on the multi-jurisdictional plan. Finally, the City provided information on facilities that are viewed as "critical" to ABAG.

Key City staff met on two occasions to identify and prioritize mitigation strategies appropriate for the City. At the first meeting, the general priorities and appropriate City departments were identified. The second meeting identified preliminary budgets and potential funding sources for strategies designed as "High" priority. The City Council was briefed on the mitigation strategies at the March 8, 2005 council meeting, which also provided opportunity for public comment. The resolution adopting the plan and strategies will be on the City Council agenda for late April.

Staff involved in this meetings included the Planning Director, Building Official, Assistant City Manager, Public Works Director, and Police Chief. The City provided the opportunity for the public to comment on the DRAFT mitigation strategies selected by City staff at the City Council meeting on February 28, 2005.

[1] For complete Census information on this city, see **http://www.bayareacensus.ca.gov/**.

Hazard and Risk Assessment

The ABAG multi-jurisdictional Local Hazard Mitigation Plan, to which this is an Annex, lists nine hazards that impact the Bay Area, five related to earthquakes (faulting, shaking, earthquake-induced landslides, liquefaction, and tsunamis) and four related to weather (flooding, landslides, wildfires, and drought). The City of Santa Clara may be impacted by shaking, liquefaction, flooding, and drought, while faulting, earthquake-induced landslides, landslides, tsunamis, and wildfires do not impact our city due to our level topography, urban setting, and distance from open ocean.

While there is not a known earthquake fault in the City of Santa Clara, the City has undertaken a number of general hazard mapping activities since the first Safety Element was prepared by the City, all of these maps are less detailed and are not as current as those shown on the ABAG website at **http://quake.abag.ca.gov/mitigation/**.

The City examined the hazard exposure of City urban land based on the information on ABAG's website at **http://quake.abag.ca.gov/mitigation/pickdbh2.html**. Of the 11,591 acres of urban land in the City,

- 10,041 acres are in the highest two categories of shaking potential;
- No acres are in an area where further studies are required of new development by the Seismic Hazard Mapping Program of the California Geological Survey due to earthquake-induced landslides;
- 10,505 acres are in an area where further studies are required of new development by the Seismic Hazard Mapping Program of the California Geological Survey due to liquefaction susceptibility;
- Almost all (11,440) acres are in areas of moderate, high, or very high liquefaction susceptibility mapped by the U.S. Geological Survey;
- 1,067 acres are in the 100-year flood plain, while an additional 74 acres are in other flood-prone areas;
- 8,116 acres are subject to dam inundation;
- No acres are in areas of existing landslides;
- Only 12 acres are subject to high, very high, or extreme wildfire threat, but 1,902 acres are in wildland-urban interface threat areas; and
- All 11,591 acres are subject to drought.

The City also examined the hazard exposure of infrastructure based on the information on ABAG's website at **http://quake.abag.ca.gov/mitigation/pickdbh2.html**. Of the 310 miles of roadway in the City,

- No miles of road are in an Alquist-Priolo Fault Rupture Study Zone;
- 266 miles of road are in the highest two categories of shaking potential;
- No miles of road are in an area where further studies are required of new development by the Seismic Hazard Mapping Program of the California Geological Survey due to earthquake-induced landslides;

- 279 miles of road are in an area where further studies are required of new development by the Seismic Hazard Mapping Program of the California Geological Survey due to liquefaction susceptibility;
- 289 miles of road are in areas of moderate, high, or very high liquefaction susceptibility mapped by the U.S. Geological Survey;
- 32 miles of road are in the 100-year flood plain, while an additional 3 miles of road are in other flood-prone areas;
- 209 miles of road are subject to dam inundation;
- No miles of road are in areas of existing landslides;
- No miles of road are subject to high, very high, or extreme wildfire threat, but 48 miles of road are in wildland-urban interface threat areas.
- Drought is not a concern for transportation.

Finally, the City examined the hazard exposure of critical health care facilities, schools, and city-owned buildings based on the information on ABAG's website at **http://quake.abag.ca.gov/mitigation/pickcrit.html**. Of the 7 critical health care facilities, 31 schools, and 78 city-owned critical facilities in the City,

- No critical facilities are in an Alquist-Priolo Fault Rupture Study Zone;
- All 7 health care, 24 schools, and 75 city-owned critical facilities are in the highest two categories of shaking potential;
- No critical facilities are in an area where further studies are required of new development by the Seismic Hazard Mapping Program of the California Geological Survey due to earthquake-induced landslides;
- All 7 health care, 27 schools, and 76 city-owned critical facilities are in an area where further studies are required of new development by the Seismic Hazard Mapping Program of the California Geological Survey due to liquefaction susceptibility;
- 6 health care, 30 schools, and all 78 city-owned critical facilities are in areas of moderate, high, or very high liquefaction susceptibility mapped by the U.S. Geological Survey;
- 2 health care, 2 schools, and 7 city-owned critical facilities are in the 100-year flood plain, while an additional school is in other flood-prone areas;
- 6 health care, 15 schools, and 65 city-owned critical facilities are subject to dam inundation;
- No critical facilities are in areas of existing landslides; and
- While no critical facilities are subject to high, very high, or extreme wildfire threat, and 1 health care, 5 schools, and 17 city-owned critical facilities are in wildland-urban interface threat areas.

Drought, though a potential problem in the City of Santa Clara, is not fully assessed. The City will be working with ABAG and other water supply agencies on this issue. The City will be developing drought mitigation plans as part of the required Urban Water Management Plan that is to be completed by end of 2005.

The City is concerned about the quality of the wildland-urban-interface threat area map and plans to work with ABAG and the Department of Forestry to improve the quality of that map.

In spite of the areas of the City located in flood-prone areas, there are no repetitive loss properties in the City based on the information at **http://quake.abag.ca.gov/mitigation/pickflood.html.**

The City plans to work with ABAG in developing each hazard's impact as ABAG will be doing risk assessment to buildings, infrastructure, and critical facilities in 2005 through early 2006. As these impacts are not fully developed, the City has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion is that earthquake shaking and liquefaction, flooding and drought are more important than faulting, earthquake-induced landslides, tsunamis, landslides and wildfires. The City is particularly concerned with performance of critical infrastructure, i.e., water storage tanks, in future earthquakes. During the 1989 Loma Prieta Earthquake, three of the six City's at grade water storage tanks were damaged.

Mitigation Activities and Priorities

As a participant in the ABAG multi-jurisdictional planning process, City of Santa Clara staff helped in the development and review of the comprehensive list of mitigation strategies in the overall multi-jurisdictional plan. The list was discussed at a meeting of the Deputy Fire Chief, Director of Water and Sewer Utilities, Assistant Director of Water Utility, the City Engineer and a Principal Engineer from Public Works on February 24 and again on March 3, 2005. At the meetings, all of the mitigation strategies were reviewed. The tentative decision on priority was made based on a variety of criteria, not simply on an economic cost-benefit analysis. These criteria include being technically and administratively feasible, politically acceptable, socially appropriate, legal, economically sound, and not harmful to the environment or our historical heritage.

Over time, we are committed to developing better hazard and risk information to use in making those trade-offs. We are not trying to create a disaster-proof region, but a disaster-resistant one. In the City of Santa Clara, many of these strategies are existing City programs, already a part of the planning process through Plan and Project Review, Building and Fire Code enforcement, and development of the City's General Plan. New activities identified, as part of this Annex, will be incorporated into these existing mechanisms. Other activities will require funds that have not been identified. The City will be working to identify potential funding sources, including capital improvement budgets, bond issues and federal or state grants.

These draft priorities were submitted to the City Manager for review. The draft priorities were then provided to the City Council on March 8, 2005. The public was provided with an opportunity to comment on the DRAFT priorities. The final strategies (as shown in the attached Table) will become an *Implementation Appendix* to the City's *Safety Element*.

In addition, the City examined the hazard exposure information to City-owned critical facilities supplied by ABAG. The City has determined that the combination of construction type, age, and shaking exposure to 6 ground-level water storage tanks (of 4 to 4.7 million gallons each) are

significant. Therefore, the City plans to apply for a Pre-Disaster Mitigation grant to retrofit these facilities for seismic reliability. The City has completed installation of several back-up power supply engine-generators at water supply facilities and storm pumping stations over the past 20 years.

Plan Maintenance and Updating Process

The City of Santa Clara is committed to monitoring and updating this plan annex as required by the Disaster Mitigation Act of 2000. The plan will be monitored on an on-going basis. Triggers that may be used to signal a need for an update will include major disasters affecting our community, legal changes, notices from ABAG as the lead agency in this process, etc. This Annex will be a discussion item by city department heads once each year in April. At that meeting, the Annex will be evaluated in light of technological and political changes or other significant events during the past year. This group will be responsible for determining if the plan should be updated.

In addition, the public will continue to be involved whenever the plan is updated and, as appropriate, during the monitoring and evaluation process. All public comments will be reviewed and evaluated. Publicly initiated changes will be integrated into the plan updates as necessary.

The City Planning Director will contact ABAG four years after this plan is approved to ensure that ABAG plans to undertake the plan update process. If so, the City again plans to participate in the multi-jurisdictional plan. If ABAG is unwilling or unable to act as the lead agency in the multi-jurisdictional effort, other agencies will be contacted, including the County's Office of Emergency Services. Counties should then work together to identify another regional forum for developing a multi-jurisdictional plan.